

RESEARCH NOTES

A NEW SPECIES OF *COMATACARUS* (ACARINA: TROMBICULIDAE) FROM CENTRAL UNITED STATES

Studies of North American chiggers of the subfamily Leeuwenhoekiiinae have revealed a new species of *Comatacarus* Ewing, a genus recently revived by Reed (1973). Examples of this species were reported previously as *Leeuwenhoekia* (*Comatacarus*) *americana* (Ewing) in studies of the larvae (Loomis, 1956, and Finley, 1958) and nymphal stage (Crossley, 1960). The type series is in the University of Kansas chigger collection currently housed at California State University, Long Beach. However, the holotype will be sent, on loan, to the Rocky Mountain Laboratory (RML and USNM). Studies upon which this paper is based were supported by the U.S. Public Health Service Research Grant AI 03407 from the National Institute of Allergy and Infectious Diseases.

Comatacarus pusillus, new species

Figure 1

Types.—Holotype (KU 6171, in RML) plus 4 paratypes (KU 6172–6175) from 24 km N, 19 km W St. Francis, Cheyenne Co, Kansas, from *Peromyscus maniculatus* (RL 521101–14) taken 1.XI.1952 by R. B. Loomis; 4 paratypes (KU 6167–6170) same data as holotype except host *Reithrodontomys megalotis* (RL 521101–15).

Diagnosis.—Palpal setal formula B/B/BBB + 7B; chela with tricuspid cap; galeala branched; 2 genualae I, genuala II and III; tibiala III; subterminala and parasubterminala I; femur I with incomplete suture; sensilla nude; PW/SD = 1.4.

Description of holotype (all measurements in microns with means and extremes of the nine types in parentheses).—Larva: red in life measuring 400 × 270, partially engorged.

Idiosoma: Dorsal body setae arranged 2-44-12-14-14-14-8-6-4 total 118; measurements: humerals 57; anterior dorsal 66–39. Ventral setae 94; measurements; 2 sternal setae 42, 48; preanal setae 27–30, 44; postanal setae 36–42; total body setae 220.

Gnathosoma: palpal setal formula B B BBB + 7B; chela 44, with a tricuspid cap; trifurcate palpal claw; galeala branched.

Scutum: With few and scattered puncta anterior margin biconcave, posterior margin smoothly rounded; AM seta with short accessory branch on basal third; AL bases anterior to AM bases; SB slightly anterior to PL bases; PW/SD = 1.4; sensilla nude.

Scutal measurements: AW 72 (73, 72–75); PW 87 (87, 81–89); SB 30 (27, 21–30); ASB 39 (35, 30–

39); PSB 27 (27, 27–30); AP 39 (38, 36–40); AM 48 (47, 45–50); AL 51 (53, 48–60); PL 45 (48, 45–55); S 84 (84, 78–87); nase 16 × 10.

Legs: 6-6-6 segments, terminating in pair of claws and clawlike empodium, without onychotriches.

Leg I: 360 (350–400); coxa with 2B (branched setae); trochanter with 1B; femur with 1B proximal, incomplete suture; and 5B distal; genu with 4B, 2 genualae, microgenuala; tibia with 8B, 2 tibialae, microtibiala; tarsus 117 × 30 with 40B, tarsala 18 (18–21), microtarsala, parasubterminala, subterminala, pretarsala.

Leg II: 312 (312–355); coxa with 1B; trochanter with 1B; femur with 6B; genu with 4B, genuala, microgenuala; tibia with 6B, 2 tibialae; tarsus 93 × 30 with 25B, tarsala 21 (21–24), microtarsala, pretarsala.

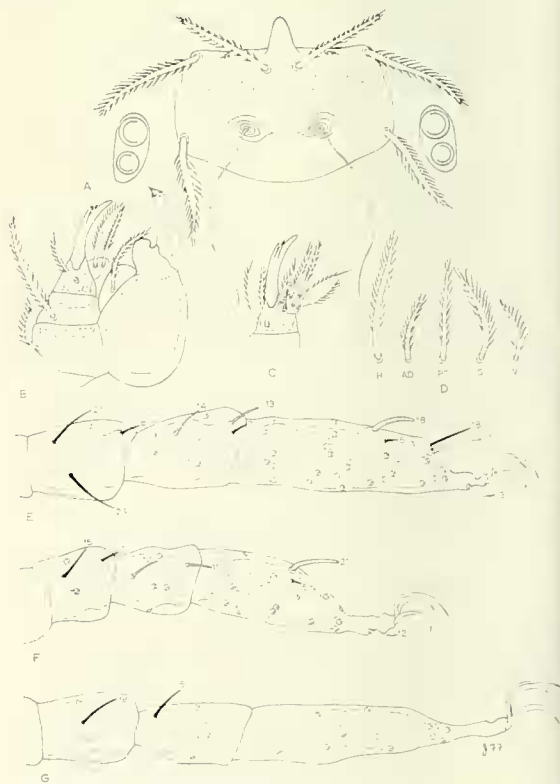


Figure 1. Larva of *Comatacarus pusillus*, new species, A, scutum and eyes; B, dorsal aspect of gnathosoma; C, ventral aspect of palpal tibia and tarsus; D, selected setae (H, humeral; AD, anterior dorsal; PD, posterior dorsal; S, sternal; V, ventral); E, leg I distal three segments showing nude setae with measurements in microns and bases of branched setae; F, leg II as above; G, leg III as above.

Leg III: 378 (354-400); coxa with 1B; trochanter with 1B; femur with 5B; genu with 4B, genuala; tibia with 5B, tibiala; tarsus 114 × 24 with 18B.

Taxonomic Remarks.—*Comatacarus pusillus* is most closely similar to *C. americanus* Ewing (1942). Examination of the lectotype of *C. americanus* (USNM 1416) revealed that it has a nude lateral palpotibial seta, shorter tarsal segments (I, 60; II, 55; III, 65) and an undivided femur I. Both *C. americanus* and *C. pusillus* have 2 genualae I whereas the other three North American species, *C. stewarti* (Gould), *C. dolosa* (Gould) and *C. inconspicuus* Reed, have only one genuala I. As noted by Vercammen-Grandjean et al. (1973) *C. stewarti* also appears to have a divided femur I.

Reed (1973) restored *Comatacarus* to generic status, and we agree with its removal from *Lecuwenhoekia*, as confirmed by examination of the holotype of the type-species, *L. verduni* (Oudemans).

Reed (1973) reported that all species of *Comatacarus* had an accessory branch on the AM seta. Not only was this character present in *C. pusillus*, it also was seen in three North American species of *Odontacarus*; *O. chiapanensis* (Hoffmann), *O. hirsutus* (Ewing) and *O. villosus* Goff and Loomis, all members of the subgenus *Tarsalacarus* Vercammen-Grandjean.

Crossley (1960) described a nymph, under the name *Lecuwenhoekia americana*, reared from a larva taken with the type series of *C. pusillus*.

Specimens examined (16).—*Comatacarus pusillus* (10): KANSAS. *Cheyenne Co.*, 24 km N, 19 km W St. Francis, 1.XI.1952, *Peromyscus maniculatus* (5, holotype + 4 paratypes), *Reithrodontomys megalotis* (4 paratypes), COLORADO. *Boulder Co.*, 21 km S Estes Park, 8.VIII.1947, *Neotoma cinerea orolestes* (1, KU 6130).

Comatacarus americanus (6): OREGON. Portland, 20.V.1936, western mole (USNM 1416, lectotype + 5).

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BUZZ POLLINATION OF *CASSIA QUIEDONDILLA* (LEGUMINOSAE) BY BEES OF THE GENERA *CENTRIS* AND *MELIPONA*

Van der Pijl (1939), Michener (1962), Linsley (1958, 1962a, b), and Wille (1963) described an effective mode of pollen collection (now termed buzz pollination) that is used by female oligolectic bees while foraging for pollen on flowers having anthers with terminal pores. We now know that hollow, tubular anthers with apical pores are found in at least 400 genera in many plant families (Harris, 1905). Our knowledge of "buzz" (vibratile) pollination is still very incomplete. The present study is a preliminary note on the pollination ecology of an additional *Cassia* species.

Field observations on bee visitations to *Cassia quiedondilla* Micheli, were conducted on 23 January 1974 on the highway midway between Tixtla and Chilapa, in the State of Guerrero, Mexico. Visitations by pollinating bees were observed for two hours, from 1100 to 1300.

Cassia quiedondilla is a large (to 3 m.) caesalpinaceous legume with large yellow flowers (Fig. 1) (Standley, 1927). The flowers are composed of two large curved petals and three highly reduced petals. The larger two petals function in combination as a